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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,191	10/03/2003	Jae-Seung Lee	CHU-0009	2148

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EXAMINER

LI, SHI K

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/678,191	Applicant(s) LEE ET AL.	
	Examiner Shi K. Li	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

- A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Drawings

1. FIG. 1, FIG. 2, FIG. 3, FIG. 4 and FIG. 8 are objected to under 37 CFR 1.84(o) because there are no descriptive legends for the boxes. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. Claims 11 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 11 and 14 recite the limitation "wherein the wavelength tunable laser is obtained by branching the semiconductor laser beams outputted from the optical channel unit to the second optical coupler, amplifying the branched semiconductor laser beams and demultiplexing the amplified semiconductor laser beams". Instant specification teaches on page 17, lines 9-11 "The wavelength tunable laser 22 may be replaced by the light obtained by branching, amplifying, and demultiplexing the output light of the optical channel unit 10". Nowhere does instant specification teaches that a tunable laser can be obtained by branching the semiconductor laser beams outputted from the optical channel unit to the second optical coupler, amplifying the branched semiconductor laser beams and demultiplexing the amplified semiconductor laser beams. In fact, demultiplexing amplified semiconductor laser beams is not a wavelength tunable laser. The former is a method step for generating light beams while the latter is an apparatus.

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3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites "second optical coupler" in line 4 of the claim without reciting a first optical coupler. Claim 13 recites "second optical coupler" in line 6 of the claim without reciting a first optical coupler. It is unclear whether there is at least one optical coupler or there are at least two optical couplers.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4-6, 10-11, 13-14 and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mells (U.S. Patent 6,853,456 B2) in view of Takei (U.S. Patent Application Pub. 2003/0030876 A1).

Regarding claims 1, 4-6, 16-17 and 20-21, Mells discloses in FIG. 1 a device comprising a plurality of semiconductor laser light sources 12, 14, 16 and 26, an optical detector 30 and a microwave spectrum analyzer. The difference between Mells and the claimed invention is that Mells does not teach a controller for controlling the frequencies of the light sources. Takei teaches in FIG. 1 a wavelength control system using beat frequencies. One of ordinary skill in

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the art would have been motivated to combine the teaching of Takei with the device of Mells because using the deviation between channel sources and reference source for correcting the channel source frequencies provides accurate wavelength spacing and reduces interference. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the deviation between channel sources and reference source for correcting the channel source frequencies, as taught by Takei, in the device of Mells because it provides accurate wavelength spacing and reduces interference.

Regarding claims 10-11, Mells teaches in FIG. 1 tunable signal source and optical coupler 28.

Regarding claims 13-14, Mells teaches in FIG. 3 modulator 88.

Regarding claims 18-19, Mells teaches in col. 1, lines 8-9 that the device is used for optical communication systems. Mells teaches in col. 1, lines 17-19 metropolitan local area networks, regional wide area networks and long distance communications networks which include bi-directional communication networks.

7. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mells and Takei as applied to claims 1, 4-6, 10-11, 13-14 and 16-21 above, and further in view of Tanaka (U.S. Patent 6,556,328 B1).

Mells and Takei have been discussed above in regard to claims 1, 4-6, 10-11, 13-14 and 16-21. The difference between Mells and Takei is that Mells and Takei do not teach an optical switch for selecting channels for tuning. Tanaka teaches in FIG. 1 a wavelength stabilization system for a plurality of light sources comprises a light switch 1 for selecting channel for tuning. One of ordinary skill in the art would have been motivated to combine the teaching of Tanaka

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with the modified device of Mells and Takei because a switch selects one channel for tuning at a time and simplifies the analysis. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a switch for selecting channel for tuning, as taught by Tanaka, in the modified device of Mells and Takei because a switch selects one channel for tuning at a time and simplifies the analysis.

8. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mells, Takei and Tanaka as applied to claims 2 and 7 above, and further in view of Lee (PCT WO 01/73980 A1).

Mells, Takei and Tanaka have been discussed above in regard to claims 2 and 7. The difference between Mells, Takei and Tanaka and the claimed invention is that Mells, Takei and Tanaka do not teach a polarization scrambler. Lee teaches on page 5, lines 2-8 polarization scrambler for stabilizing beat frequency components. One of ordinary skill in the art would have been motivated to combine the teaching of Lee with the modified device of Mells, Takei and Tanaka because a polarization scrambler stabilizes beat frequency components. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a polarization scrambler for stabilizing beat frequency components, as taught by Lee, in the modified device of Mells, Takei and Tanaka.

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mells and Takei as applied to claims 1, 4-6, 10-11, 13-14 and 16-21 above, and further in view of Imajuku et al. (U.S. Patent 6,909,732 B2).

Mells and Takei have been discussed above in regard to claims 1, 4-6, 10-11, 13-14 and 16-21. The difference between Mells and Takei is that Mells and Takei do not teach a tunable

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optical filter. Imajuku et al. teaches in FIG. 8 a device for tuning wavelength where a wavelength scanning unit is used to tune one wavelength at a time. Imajuku et al. teaches in col. 9, lines 1-5 to use a tunable filter for the wavelength scanning unit. One of ordinary skill in the art would have been motivated to combine the teaching of Imajuku et al. with the modified device of Mells and Takei because a tunable filter selects one channel for tuning at a time and simplifies the analysis. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use tunable filter for selecting a wavelength for tuning at a time, as taught by Imajuku et al., in the modified device of Mells and Takei because a tunable filter selects one channel for tuning at a time and simplifies the analysis.

10. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mells and Takei as applied to claims 1, 4-6, 10-11, 13-14 and 16-21 above, and further in view of Lee (PCT WO 01/73980 A1).

Mells and Takei have been discussed above in regard to claims 1, 4-6, 10-11, 13-14 and 16-21. The difference between Mells and Takei is that Mells and Takei do not teach a polarization scrambler. Lee teaches on page 5, lines 2-8 polarization scrambler for stabilizing beat frequency components. One of ordinary skill in the art would have been motivated to combine the teaching of Lee with the modified device of Mells and Takei because a polarization scrambler stabilizes beat frequency components. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a polarization scrambler for stabilizing beat frequency components, as taught by Lee, in the modified device of Mells and Takei.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
25 September 2006



Shi K. Li
Patent Examiner